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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/825,212

04/16/2004

Stephen Alan Allpress

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EXAMINER

BAKER, STEPHEN M

ART UNIT

PAPER NUMBER

2112

MAIL DATE

DELIVERY MODE

11/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/825,212	ALLPRESS, STEPHEN ALAN	
	Examiner	Art Unit	
	Stephen M. Baker	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 25 is objected to because of the following informalities: "control the method" should be "perform the method". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 6-11, 13, 18-23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,292,918 to Sindhushayana *et al* (hereafter "Sindhushayana").

Sindhushayana discloses arrangements and an algorithm (Fig. 2) for terminating decoding iterations in a turbo decoder of a serial or parallel turbo code.

Sindhushayana's iteration termination arrangements include performing, after iteration $N=TR+1$, (" $N>TR$ "), determining of a minimum absolute probability value for all the bits in the block being decoded (" $\text{MIN}|L|>Pr$ "), thereby "determining whether a pre-determined decoder termination threshold metric has been met (... but only) after a pre-determined (maximum) number of decoder iterations" with a "threshold metric processor" (88). This step is followed by a CRC check ("CRC OK") with a "cyclic redundancy check processor" (83) when the minimum absolute probability value for all the bits in the block being decoded is above a threshold value (column 3, lines 50-58),

thereby "determining whether a decoder termination test based on a cyclic redundancy check code has been passed."

The CRC check is of course a "further use" of the frame responsive to the threshold test which test thus effectively operates by "identifying the frames for further use."

Iterations then terminate ("END") "only if the cyclic redundancy check test has been passed," requiring a "decoder termination means" in Sindhushayana's decoder.

Regarding claims 6 and 18, in other embodiments, alternatives to the minimum absolute probability mentioned by Sindhushayana are the average absolute probability, the median absolute probability, and a next-to-minimum absolute probability (column 4, lines 4-12). The probability values in turbo decoding are represented with log-likelihood ratio values.

Regarding claim 25, Sindhushayana's decoding may be implemented by programmed DSPs (column 9, line 28), requiring a "computer program product comprising program code means."

Claim Rejections - 35 USC § 103

4. Claims 2-5, 12, 14-17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindhushayana.

Regarding claims 2-5 and 14-17, although Sindhushayana does not specifically mention substituting the threshold test based on the minimum absolute probability value with a threshold test based on cross-entropy, on sign change ratio, on sign difference

ratio, or on some other hard-decision measure, Sindhushayana does suggest that any other measures indicative of the progress of turbo decoding may be used in place of the measures mentioned by Sindhushayana (col. 4, lines 4+). Official Notice is taken that cross-entropy, sign change ratio, sign difference ratio, and other hard-decision based measures were well-known measures indicative of the progress of turbo decoding at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to substitute cross-entropy, sign change ratio, sign difference ratio, or some other hard-decision measure in place of Sindhushayana's progress measures. Such substitutions would have been obvious because cross-entropy, sign change ratio, sign difference ratio, and other hard-decision based measures were already well-known measures indicative of the progress of turbo decoding.

Regarding claims 12 and 24, Sindhushayana does not specify that the cellular wireless system is a "W-CDMA" cellular wireless system. Official Notice is taken that W-CDMA was a well-known cellular wireless system standard at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply Sindhushayana's turbo code decoding arrangements to turbo code decoding in a W-CDMA cellular wireless system. Such an application would have been obvious because W-CDMA was already a well-known cellular wireless system standard.

Response to Arguments

5. Applicant's arguments filed 06 September, 2007 have been fully considered but they are not persuasive.

The standing rejection under 35 U.S.C. 102(b) has been clarified.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques H. Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Stephen M. Baker
Primary Examiner
Art Unit 2112

smb